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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/360,582 07/26/99 BLACKBURN B MIT-8312

PATRICK J O'SHEA ESQ
SAMUELS GAUTHIER & STEVENS LLP
225 FRANKLIN STREET SUITE 3300
BOSTON MA 02110

PM82/0925

EXAMINER

MUN, K

ART UNIT

PAPER NUMBER

3641

DATE MAILED: 09/25/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/360,582

Applicant(s)

BLACKBURN, BRANDON W.

Examiner

K. Kevin Mun

Art Unit

3641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☒ Responsive to communication(s) filed on the Remark filed on 12 September 2000.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 1999 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) _____.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Drawings

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the moderator/reflector must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
3. The drawings are objected to under 37 CFR 1.83(a) because they fail to show in which direction the generated neutron in the target is directed as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Correction is required.

Specification

4. The disclosure is objected to because of the following informalities: The disclosure is insufficient as to what the differences between elements with reference numerals 12 and 30 are. If they were the same, the examiner suggests to change it to be the same since they may lead to confusion. If they were meant to designate different elements of the invention, the disclosure is insufficient as to how and in what manner

they are different, as to what portion of element 12 the element 30 represent, and as to what element 12 encompasses.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2 and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eggers (US 5392319) in view of any of Lidsky et al. (US 5784423), or Prince (US 4811687), for the same reasons set forth in Section 8 of the last Office Action filed 3/6/2000.

Applicant's arguments filed 9/12/2000 have been fully considered but they are not persuasive. In response to applicant's argument that the resultant combination of Lidsky and Eggers still fails to disclose cooling a low-Z material as claimed, it is to be pointed out that the applicant clearly misunderstood the reasons for combining the two cited references. As it becomes apparent from Section 8 of the last Office Action filed 3/6/2000, which specifically describes how the cited references are combined and why it is obvious to combine, it is not examiner's intention to combine the high-Z target material of Lidsky to the teachings of Eggers as applicant alleges. Rather, it is the examiner's position that the liquid gallium coolant of Lidsky, which is old and

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conventional in the target-cooling art, is combined to the teachings of Eggers, in order to enhance cooling of the low Z material target of Eggers. Furthermore, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument that Prince is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the liquid gallium coolant as disclosed by Prince functions as a heat transfer medium for temperature control of substrate holder. Applicant alleges that a skilled person working in the field of the present invention would certainly not look to the field of thin-film deposition and has nothing to do with the field of accelerator based neutron source. However, the liquid gallium coolant disclosed by Prince is more closely related to a convective heat transfer field, e.g. temperature control. In fact, the liquid gallium coolant also has nothing to do with thin-film deposition. In this respect, the liquid gallium coolant of Prince can be considered as reasonably pertinent to the same problem of temperature control as Eggers and the invention as claimed. Thus, it is the examiner's position that the liquid gallium coolant of Prince is analogous art and it is a well-known coolant medium in the convective heat transfer art and it is obvious to combine such a conventionally known art expedient to the target of Eggers.

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7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eggers (US 5392319) in view of any of Lidsky et al. (US 5784423), Prince (US 4811687) or Smither et al. (US 4953191) as applied to claim 1 above, and further in view of Schlyer et al. (US 5917874), for the same reasons set forth in Section 9 of the last Office Action filed 3/6/2000.

Conclusion

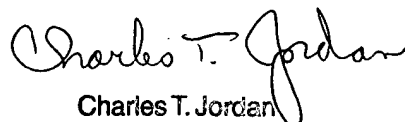
8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

9. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Kevin Mun whose telephone number is 703-305-1839. The examiner can normally be reached on Tue-Fri 8:00-5:30.

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11. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.



Charles T. Jordan
Supervisory Patent Examiner
Group 1000

K. Kevin Mun
September 20, 2000